

REMARKS/ARGUMENTS

Applicants respectfully request reconsideration of the application in view the present amendments in the following remarks. By this amendment, claims 1 and 5 are amended. As a result, upon entry of this amendment, claims 1-3 and 5-9 remain pending in the application, with claims 1 and 5 being independent claims. It is believed that no additional fees are due for the consideration of this paper. However, if additional fees are due, the Commissioner is authorized to charge such fees to deposit account number 50-3629.

Amendments to the Claims

It is respectfully submitted that the claims as amended above are supported by the application as originally filed in the Patent Office on July 12, 2006, that the amended claims satisfy the written description requirement and the other requirements of 35 U.S.C. § 112, and that no new matter is being added. Claim 1 is amended to more clearly recite that the method include drilling a borehole with a drill string while an inertial survey package is disposed within and advances with the cutting end of the drill string while the drill string drills the borehole, withdrawing the drill string and determining when the drill string is halted during withdrawal, and taking position readings from the survey package in response to determining that the drill string is halted during withdrawal. Claim 5 is amended in a similar manner. These amendments are supported by the application as originally filed at least at Figs. 1-3 and the accompanying text at page 4, line 7 through page 5, line 23 wherein the inertial survey package 21 is disposed in the drill string 3 proximate the drill bit 1 as a borehole is drilled, “sleeps” while the hole is advanced, and wakes up and records data as each drill rod is retracted. In view of this, Applicant respectfully submits that the amendments to claims 1 and 5 do not present new matter and do not raise new issues, and respectfully request entry of the present amendments and consideration of the claims as amended.

Applicant’s Interview Summary

On July 29, 2010, Applicant’s representative, Scott Baxendale, conducted a telephonic interview with Ex. Hutchins. During the interview, Ex. Hutchins and Mr. Baxendale discussed the rejection of the claims as unpatentable over U.S. Patent No. 4,329,647 (Freedman) in view of U.S. Patent No. 4,047,430 (Angehrn). Mr. Baxendale presented proposed claim amendments clarifying that the inertial survey package or survey

tool is disposed within the drill string while the drill string drilled the borehole, and then takes position readings as withdrawal of the drill string is halted to remove drill rods from the drill string. Mr. Baxendale then pointed out that proposed amendments distinguished over the applied references since neither reference teaches drilling a borehole while surveying equipment is disposed within the drill string. In particular, the Freedman patent specifically teaches removing the drill string from a borehole and then taking a survey, and the Angehrn patent teaches drilling the borehole, removing the drill bit from the drill string, and replacing the drill bit with a well logging instrument 33. Ex. Hutchins agreed that the proposed amendments distinguished over the applied references, but believed that other art may exist that taught drilling a borehole with a drill string having survey equipment disposed therein that would take survey readings as the drill string is withdrawn. Ex. Hutchins cited U.S. Patent No. 5,899,958 (Dowell et al.) as a possible example of a drill string having sensors making measurements as the sting is withdrawn. As neither party had reviewed the Dowell et al. patent, they agreed that no conclusions could be drawn during the interview as to the Dowell et al. patent's relevance to the proposed amended claims. Mr. Baxendale agreed to review the reference and Examiner Hutchins' comments, and consider whether to amend the claims further to recite readings being taken after determining that the drill string is halted.

Applicants wish to thank Ex. Hutchins for her time and consideration of Applicants' arguments during the interview, and for her current and future assistance in advancing the present application toward allowance.

Response to the Rejections under 35 U.S.C. §103

In the Office action, claims 1-3 and 5-9 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Freedman patent in view of the Angehrn patent. Applicants respectfully request withdrawal of the rejection in view of the present amendments to claims 1 and 5.

Claims 1 and 5 as amended recite that the surveying tool or package is disposed within the drill string at the cutting end and advances with the drill string as the borehole is drilled. As discussed with Examiner Hutchins during the interview, neither applied references teaches or suggests this feature. The Freedman patent specifically teaches removing the drill string from a borehole and then taking a survey. The measuring device is lowered into the drilled borehole on a wire-line cable as opposed to being disposed within the

drill string as recited in the claims. The Angehrn patent teaches drilling the borehole, removing the drill bit from the drill string, and replacing the drill bit with a well logging instrument 33. No suggestion is made of disposing the logging instrument 33 within the drill string at the same time the drill bit is attached at the cutting end of the drill string. Because neither reference discloses or suggests having a survey tool disposed within a drill string as a borehole is being drilled, this element is wholly missing from the proposed combination of references. For at least this reason, the references cannot be combined to establish a *prima facie* case of obviousness, and the rejection of claims 1-3 and 5-9 should be withdrawn.

Regarding the Dowell et al. patent referenced by Ex. Hutchins during the interview, the reference teaches a logging while drilling (LWD) device for a rotary drilling assembly. The reference discusses at great length the operation of the LWD device while the drilling assembly is drilling a borehole, and mentions that the LWD tool is capable of obtaining images during the removal of the drilling assembly from the wellbore. However, no details are provided regarding the operation of the LWD tool during withdrawal. More importantly, the reference does not teach the limitations of the amended claims of activating the LWD tool when drilling is complete, withdrawing the drill string from the borehole, determining when the drill string is halted, and taking position readings with the LWD tool in response to determining that the drill string is halted. The Dowell et al. patent does not teach measurements being taken intermittently as the drill string is withdrawn from the borehole, let alone doing so after determining that movement of the drill string is halted. Consequently, the amended claims are not anticipated or rendered obvious by the Dowell et al. patent, and Applicants respectfully request an indication that the claims are allowable at the Examiner's earliest convenience.

CONCLUSION

Applicants have made a diligent effort to advance the prosecution of this application by amending the claims, and by describing herein how the claims distinguish over the applied prior art. For at least the foregoing reasons, reconsideration and withdrawal of the rejection of the claims and allowance of the currently pending claims are respectfully requested. Should the Examiner wish to discuss the foregoing or any matter of form in an effort to advance this application toward allowance, Examiner Hutchins is urged to telephone the undersigned at the indicated number.

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Respectfully submitted,

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